

**THE CHALLENGES AND OPPORTUNITIES FOR RECORDS MANAGEMENT  
AT THE JET  
PROPULSION LABORATORY**

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**TO THE  
GREATER LOS ANGELES CHAPTER  
ARMA, INTERNATIONAL**

**APRIL 19, 2000**

## **AGENDA**

- **Information about JPL**
- **Description of the JPL Records Management Program**
- **Storage of Inactive Records**
- **Preservation of Historically Valuable (Archival) Records**
- **What are some of the challenges, as well as opportunities, for records management at JPL?**
- **Closing**

## **INFORMATION ABOUT JPL**

- **What is JPL—the Jet Propulsion Laboratory?**
  - **JPL is**
    - **an operating division of the California Institute of Technology (Caltech);**
    - **a federally funded research and development center (FFRDC) under contract with NASA—National Aeronautics and Space Administration;**
    - **supports NASA and Defense programs, and civil programs of national importance compatible with JPL capabilities;**
    - **is the lead U.S. center for robotic exploration of the solar system;**
    - **manages the Deep Space Network, which communicates with spacecraft and conducts scientific investigations from its complexes in the Mojave Desert, in Spain, and in Australia.**
  - **JPL is located at the foot of the San Gabriel Mountains, near Pasadena.**
  - **The Director of JPL is Dr. Ed Stone (since January 1991).**
- **Origins date to the 1930s, when Caltech professor Theodore von Karman conducted pioneering work in rocket propulsion.**
  - **Graduate students tested a primitive rocket engine in a dry riverbed area north of where the Rose Bowl is now located—first rocket firing took place there on October 31, 1936.**

- **U.S. ARMY ERA**
  - **After successful rocket experiment, von Karman, who also served as a scientific adviser to the U.S. Army Air Corps, persuaded the Army to fund development of strap-on rockets—JATO, for “jet-assisted take-off”—to help overloaded Army airplanes to take off from short runways.**
  - **Up to 1958**
    - **Funded by Army Ordnance, JPL’s early efforts would eventually involve technologies beyond those of aerodynamics and propellant chemistry, technologies that would evolve into tools for space flight, secure communications, spacecraft navigation, and control and planetary exploration.**
    - **Work included:**
      - **Small unguided missiles, called the Private**
      - **Experimented with radio telemetry from missiles**
      - **Planned for ground radar and radio sets**
      - **Corporal—guided missile, with two-way radio control and radar and primitive computer at the ground station**
      - **Developed a supersonic wind tunnel and array of environmental test technologies**
      - **Developed new test techniques and a new discipline called system engineering**
      - **Developed the flight and ground systems**
      - **Flew first successful U.S. space mission—Explorer 1**
        - **Launch on January 31, 1958**

- **NASA ERA, 1958 to Present**
  - **On December 3, 1958, two months after NASA was created by Congress, JPL was transferred from Army jurisdiction to that of NASA.**
  - **JPL since then has been involved with a series of robotic spacecraft to explore space.**
    - **These have included:**
      - **Ranger and Surveyor—to the moon**
      - **Mariner missions to Mercury, Venus, and Mars**
      - **Viking—to Mars**
      - **Voyager 1 and 2**
        - **Voyager 1 and 2—flew by Jupiter and Saturn**
        - **Voyager 2—flew by Uranus and Neptune**
      - **Magellan—to Venus**
      - **Galileo—Jupiter**
      - **Ulysses—to the Sun**
      - **Mars Observer—with which contact was lost as it neared Mars**
      - **Mars Global Surveyor—Mars**
      - **Mars Pathfinder—Mars**
      - **Mars Climate Orbiter—lost near Mars (atmosphere)**
      - **Mars Polar Lander—lost near/on Mars**
      - **Cassini—to Saturn**
      - **STARDUST—to collect dust and volatile materials from near the comet Wild-2**
      - **Deep Space 1—to test an ion engine and 11 other new Technologies**

## **DESCRIPTION OF THE JPL RECORDS MANAGEMENT PROGRAM**

- **Overall direction for the JPL Records Management Program comes from the Prime Contract between Caltech and NASA, which is currently NAS7-1407.**
  - **The clause titled “Property Rights in Records” specifically describes the requirements imposed on Caltech and the rights given to both Caltech and NASA in regards to records.**
  - **In this clause, there is the requirement that Caltech use the NASA Records Retention Schedules (1994) for disposition of Government records.**
  - **It identifies the Government records as facilities, scientific, and technical records, with exceptions; and Contractor records as communications, records of deliberation, preliminary or draft reports, recommendations and plans prepared for JPL’s use only by potential subcontractors, proprietary information, and personnel records.**
  - **As a Contractor, the Caltech Office of the General Counsel (OGC) follows first and foremost the FAR, or Federal Acquisition Regulations, and U.S. Statute, in addition to other clauses in the Prime Contract. Therefore, the retention period that I follow is based first on the OGC policy, and, then, on the NASA Records Retention Schedules.**
  - **The Caltech imposed records retention requirement is 6 years, 3 months after final payment of the applicable Prime Contract.**
    - **So, this means that first, the Prime Contract must expire (September 1998). Then all associated subcontracts and Task Orders must be closed. Next, Caltech and NASA must agree that final payment has been received. After that, the 6 years and 3 months requirement is implemented. Then, and only then, can the inactive records scheduled for destruction actually be destroyed.**

- **The Laboratory's institutional policy is stated in the Management of Active and Inactive Records Policy, in which is stated the minimum retention requirements for both active and inactive records, whether in hardcopy or electronic form.**
  - **This policy is available for all employees to read in JPL's online DMIE Information System**
    - **DMIE Information System consists of an electronic database serving as a repository for institutional documents, including policies, procedures, charters and role statements, position descriptions, and manuals. Such documents are no longer distributed on paper.**
    - **The System, which is for internal use only, contains both the current official documents, as well as the Archive documents.**
  - **In the policy, definitions are provided (or, actually linked to an online Glossary) and procedures are referenced.**
    - **The procedures for transferring records to storage, as well as for temporarily withdrawing and returning them to storage, are available in the DMIE Information System.**
- **Another resource for employees is our Web site, which contains information about the JPL Archives, access to the BEACON-Archives Online Catalog, and information on Records Management (<http://beacon-archives.jpl.nasa.gov>). While the Archives site and Catalog are accessible by the public, the Records Management section is open only to JPL and Contractor employees, since it only pertains to them.**
  - **The form to use to transfer records to Records Storage is provided online.**
    - **It is filled out as a Word document and, at this time, is printed out by the customer.**

- **What about records destruction?**
  - **As I have already mentioned, the retention period for inactive records is long—6 years and 3 months after final payment of the applicable Prime Contract.**
    - **This means that it could be 15 years or more before any inactive records created under a particular Prime Contract can be destroyed.**
    - **Now, life is made even more interesting because NASA has imposed, because of litigation, freezes on the destruction of records. We have not been told how long these freezes will remain in place.**



## **STORAGE OF INACTIVE RECORDS**

- **Central File**
  - The earliest effort came with the creation and maintenance of a Central File, which existed from 1944 to 1962. After the Central File was closed, in part at least to conserve space, these records were microfilmed, and the originals were destroyed.
- **Laboratory Records Center**
  - This was established in the 1960s to provide a storage facility off-site for inactive records coming from projects and programs, individual employees, and administrative offices. The purpose of the facility was, and continues to be, to store boxes of records, and not to provide a centralized filing system for the Laboratory. It also served as off-site storage for the JPL Library and Engineering Document Services (engineering drawings).
  - During the first two decades of its operation, the Records Center was managed by JPL. Since late 1988, it has been managed and operated by contractor companies.
    - The current contractor is Sherikon Space Systems, Inc., headquartered in Orlando, FL.
    - The new name of the operation is the JPL Records Management Facility.
      - The facility is located in Pasadena, approximately eight miles from the Laboratory.
    - The contractor is responsible for picking up, storing, retrieving, and delivering inactive records JPL employees and organizations.

- They also provide off-site storage, pick up, retrieving, and delivery services for the JPL Library (books and periodicals); Engineering Document Services (engineering drawings and master microfilm sets); Documentation Services (JPL Publications, such as brochures, pamphlets, project overviews, etc.); and Graphics Services (print negatives).
- NARA Pacific Region facility (Laguna Niguel)
  - JPL uses the NARA facility for storing Government-owned records created under the Prime Contract with NASA.

## **PRESERVATION OF HISTORICALLY VALUABLE (ARCHIVAL) RECORDS**

- **JPL Archives**
  - **The JPL Archives is the Institutional Archives for the Laboratory.**
  - **It is operated by Sherikon Space Systems as well.**
  - **The mission of the Archives is to document the history of the Laboratory's flight projects, research and development activities, and administrative operations.**
  - **Holdings of the Archives include:**
    - **The History Collection, which was mentioned earlier;**
    - **Records for such projects as the Earth Observing System, Galileo, Magellan, Mariner, Mars Observer, Viking, and Voyager;**
    - **Audiovisual materials, including photographs, and negatives, motion picture film, video tape, and CD-ROMs;**
    - **Microfilm Collection , which contains administrative reports, as well as information on both Army Ordnance and NASA projects and other programs at JPL; and**
    - **Lastly, the Oral History Collection provides the unique personal narrative experiences of JPL employees**

- **WHAT ARE SOME OF THE CHALLENGES, AS WELL AS OPPORTUNITIES, FOR RECORDS MANAGEMENT AT JPL?**
  - **Some of these challenges and opportunities are:**
    - **Working with engineers and scientists to help them understand, but more importantly to accept, the policy that the records they create while doing work for JPL and NASA are *institutional* records, and not their own *personal* records to do with as they want.**
      - **In the Management of Active and Inactive Records Policy previously mentioned, it is stated that, “All records, whether in hard copy or electronic form, that are created or received by JPL and on-site contractor employees in the conduct of performing JPL work are institutional property.”**
      - **This is an ongoing challenge.**
    - **Working with engineers and scientists to help them understand and accept the definition of a *record*.**
      - **At JPL, the definition of record that I accept is the one used by the National Archives and Records Administration, and, therefore, by NASA.**
        - **A record “includes all books, papers, maps, photographs, machine-readable materials [electronic records], or other documentary materials, regardless of physical form or characteristics, made or received . . . in connection with the transaction of . . . business....” (*A Federal Records Management Glossary*, 1993, 3<sup>rd</sup> ed., National Archives and Records Administration)**

- But the challenge to this definition comes with the NASA requirement that JPL be registered as ISO 9001 compliant.
  - What is ISO 9001?
    - ISO 9001 is a set of requirements in the International Organization for Standardization family of standards. It specifically applies to organizations doing design development, production, testing, and servicing of a product. (from the *Guide to ISO at JPL* Web site)
    - One of its elements is the Control of Quality Records, which requires that “quality records be maintained to demonstrate conformance to specified requirements and the effective operation of the quality system.” (from David Hoyle, *ISO 9000 Quality Systems Handbook*, Oxford: Butterworth-Heinemann Ltd., pp. 440)
    - According to ISO, a record “is a document which furnishes objective evidence of activities performed or results achieved. A quality record provides objective evidence of the fulfilment of the requirements for quality (e.g. product quality record) or the effectiveness of the operation of a quality system element (e.g. quality system record). (Hoyle, *ISO 9000 Quality Systems Handbook*, p. 442.)
    - Included in the requirements for quality records are that the identification, collection, indexing, access, filing, storage, maintenance, retention, and disposition of the records be described, documented, and carried out.
  - In an effort to ensure that employees know that quality records are a *subset of all records* at JPL, rather than the *only* records that they need to be concerned about, this is stressed both in the Management of Active and Inactive Records Policy, as well as in presentations on quality records made by the JPL ISO Program Office.

- **As a result of the ISO 9001 registration requirement, employees have become more aware of the records under them in their offices and laboratories, and are more likely to be amenable to sending inactive records to off-site storage.**
- **Working the Knowledge Management Task to help them understand and accept the value of records management in the capture and reuse of knowledge.**
  - **At JPL, Knowledge Management is defined as “the process of making relevant information available quickly and easily for people to use productively. Information management is the process that focuses on the acquisition, arrangement, storage, retrieval, and use of information to produce knowledge.” (from *A Knowledge Management Architecture for JPL*, prepared by the Knowledge Management Study Team, January 15, 1999, JPL Document D-16577, p. v)**
  - **One of the initiatives included in the JPL KM activity is Document Management, which includes elements concerned with setting up project libraries and creating an electronic archives.**
  - **The purpose of the project libraries is to have a Web-based document management system with which to easily store, access, and share information in a collaborative work environment. In addition to projects, program offices and line organizations are increasingly turning to this system to store their documents and records online.**
  - **The goal in establishing the electronic archives is create a place to store these project libraries once the projects, for which they were set up, close down. The information would be readily available electronically for retrieval and reuse by engineers and scientists whenever they want and need it. I am working with the KM Task to have our contractor for records management and archives services maintain the electronic archives after it becomes operational.**

- **Needless to say, addressing the issues of ever-changing technology, its preservation, and the retrievability of the information will be key to ensuring the ongoing viability of this archives. JPL Archivists are working with KM to address these issues.**
- **Of course, these are not the only challenges and opportunities for records management at JPL. Others, which readily come to mind, are:**
  - **The volumes of E-mail sent and received.**
  - **The use of digital imaging without centralized controls.**
  - **The proliferation of databases to meet a special needs.**
  - **The ongoing administrative reorganization.**

## **CLOSING**

- **I hope that the video, “Welcome to Outer Space,” which I showed you at the beginning of this presentation, gave you a sense of the exciting and challenging work that JPL has done, is doing today, and proposes to do tomorrow.**
- **With their focus on such work, it is a real challenge to get engineers and scientists interested in records management.**
- **But, as they increasingly see the values of systematic records retention and disposition and of the reuse of knowledge, I believe they are becoming more appreciative of the benefits of records management to their work.**